

XRISM pre-pipeline/operations/ToO response, etc

Managed by ISAS/JAXA in Japan

**Hiromitsu Takahashi** (Hiroshima University)

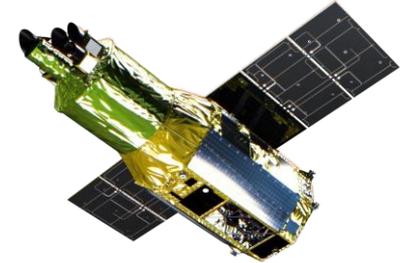
On behalf of Science Operation Team (SOT)

(=SOC in JP +SDC in US)

- Science Operation Team = SOC (JAXA) + SDC (GSFC)
  - SOC (JAXA) includes Mission Operation Team: MOT.
- JAXA facilities
- Operation timeline
  - TOO observation
- Data process/distribution
- Xtend transient search

## Goal of the Science Operations

- Enhance science outputs from the XRISM mission

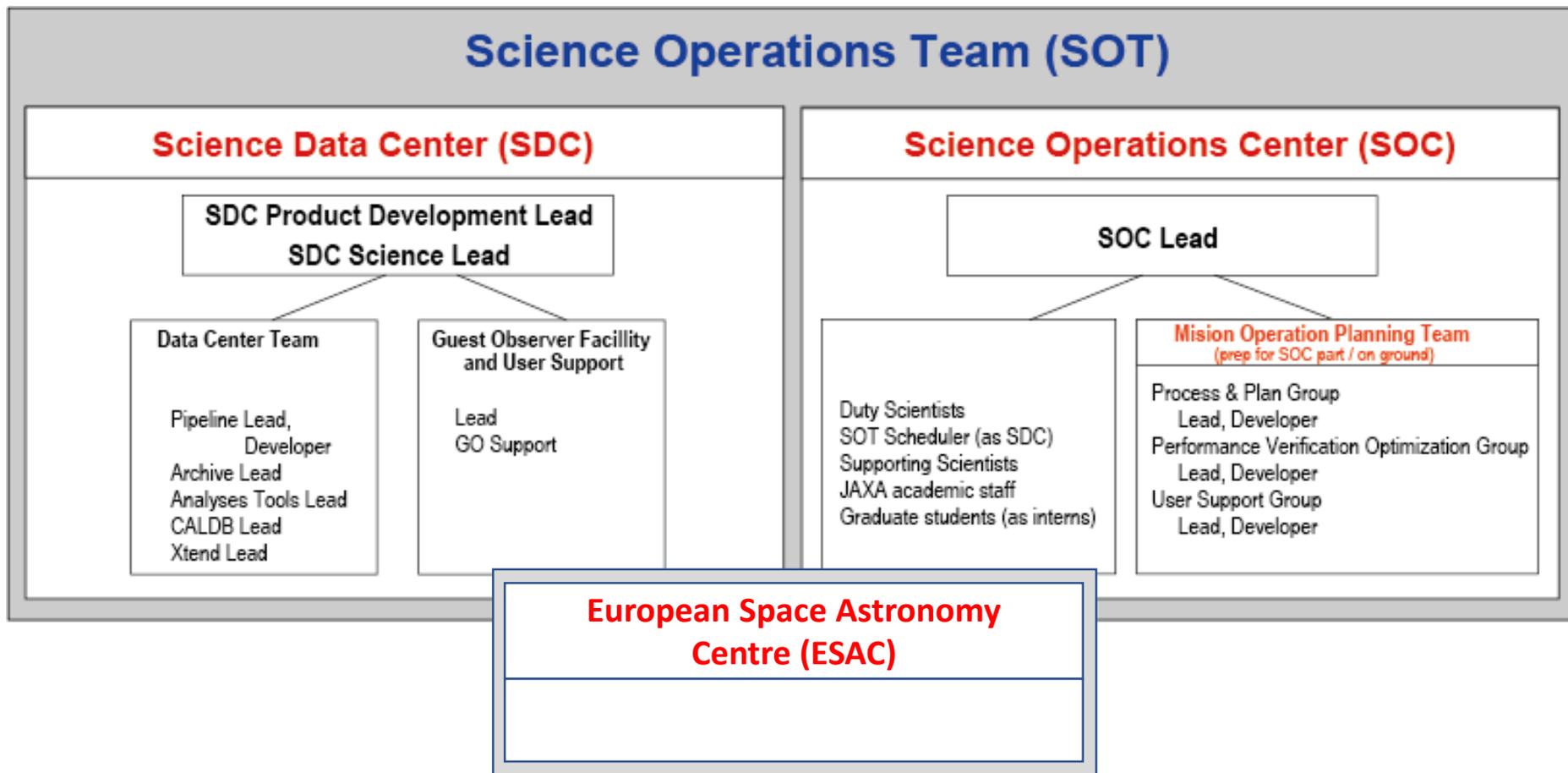


## Tasks/responsibility of the Science Operations Team (SOT)

- **SO1:** Performing guest observer (GO) program and the data distribution
  - Proposal handling
  - Science Observation scheduling, Planning, ToO handling etc
  - Pre-pipeline process / Pipeline process
  - Data archive
  - Quick-look viewing
- **SO2:** Release of the analysis software and calibration database
  - Development and release of analyses tools & CALDB
- **SO3:** GO support
  - User guide documents
  - Researcher webpages
  - Helpdesk, handling questions from GO
- **SO4:** Performance Verification and Optimization (PVO) activities
  - Activities to enhance performance of observatory
  - Health/performance checking.

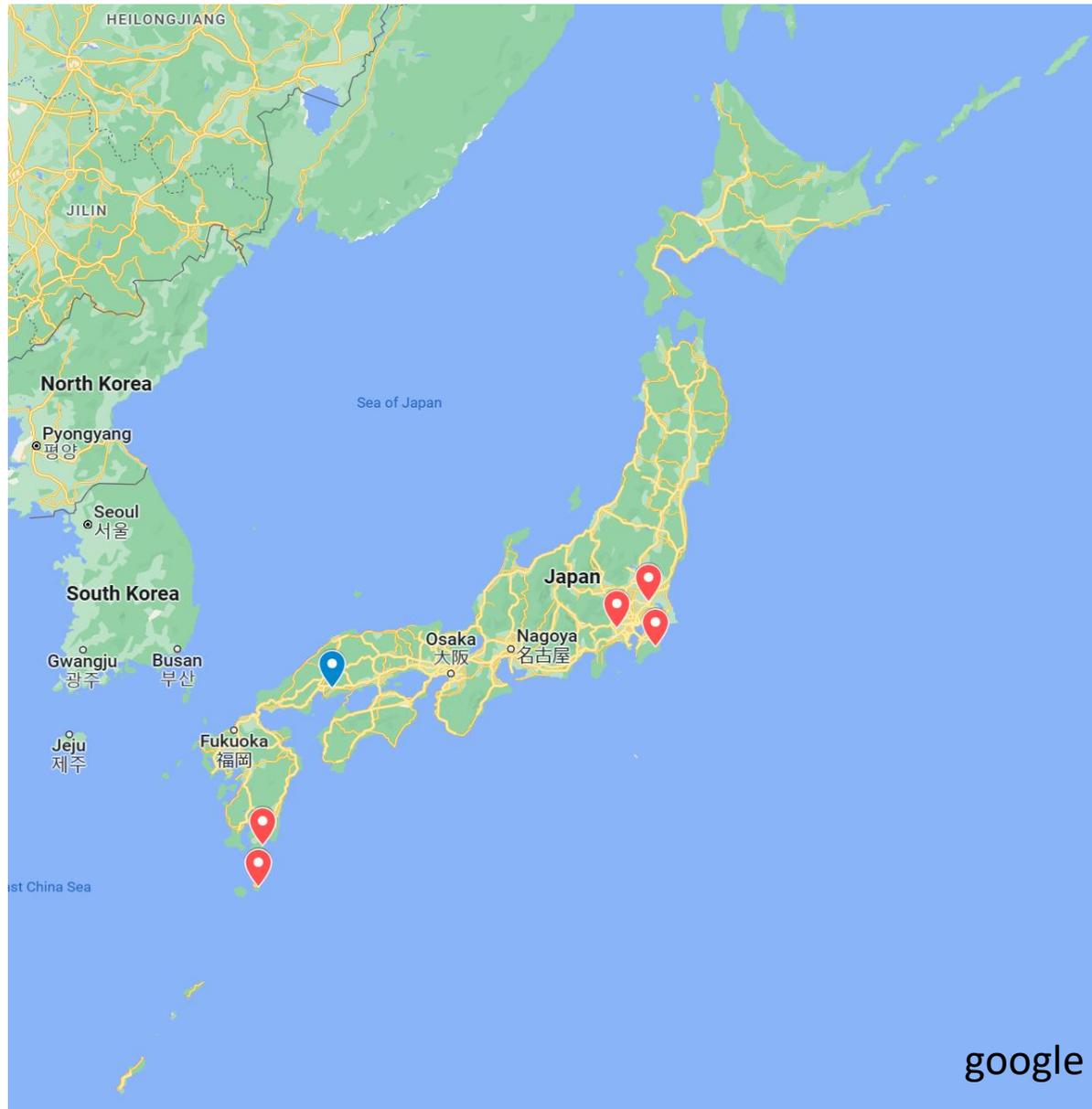
See more details in Terada et. al. JATIS 037001-2 (2021)

# SOT Team Structure



- Tasks will be covered by **SOC** (JAXA), **SDC** (NASA), and **ESAC** (ESA)
- In Japan, **MOPT** prepares the science operations and mission operations, which will become **SOC** and **MOT** (JAXA), respectively.

# JAXA facilities



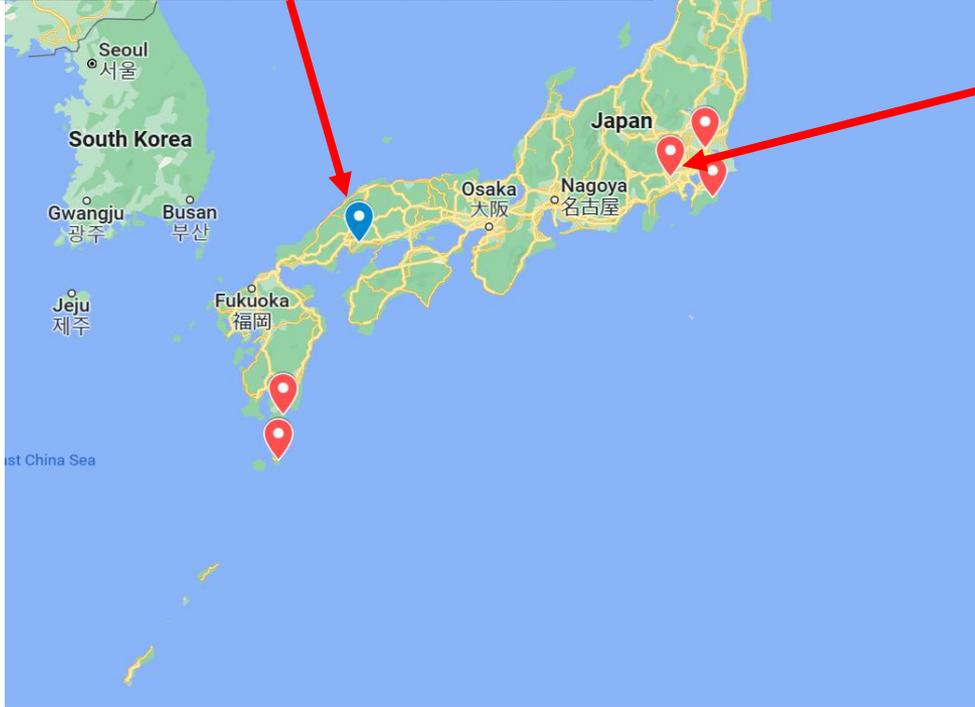
# JAXA facilities



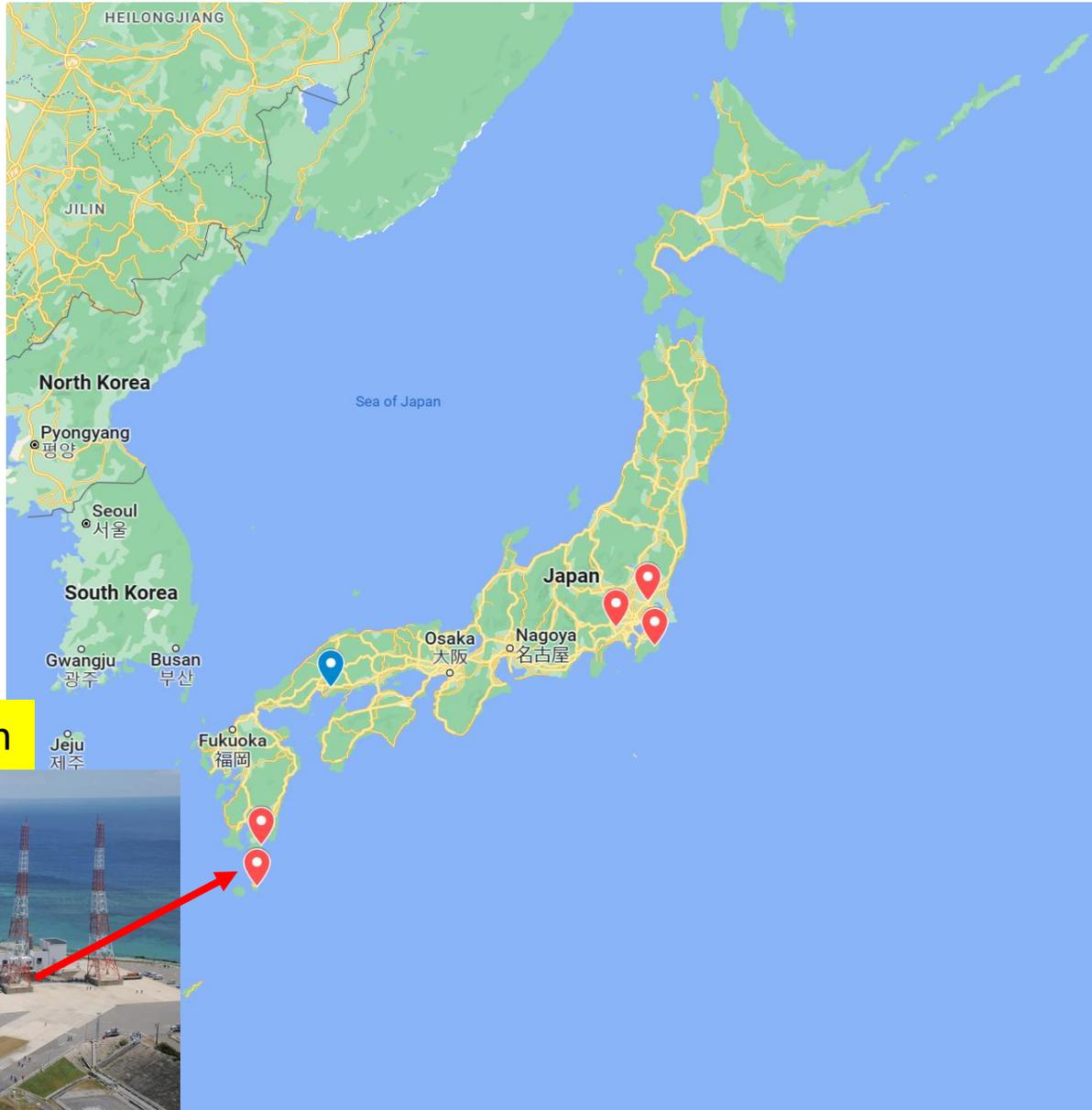
Hiroshima



Tokyo



# JAXA facilities



Tanegashima: launch



# JAXA facilities



**Uchinoura (=USC)**  
(34/20m antenna):  
telemetry (main)



**Tanegashima: launch**



**Katsuura (20m antenna):**  
telemetry (backup)



# JAXA facilities

**Sagamihara (=ISAS):**  
operation center



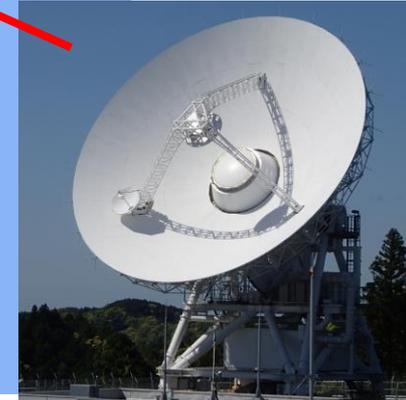
**Tsukuba: Test facility**



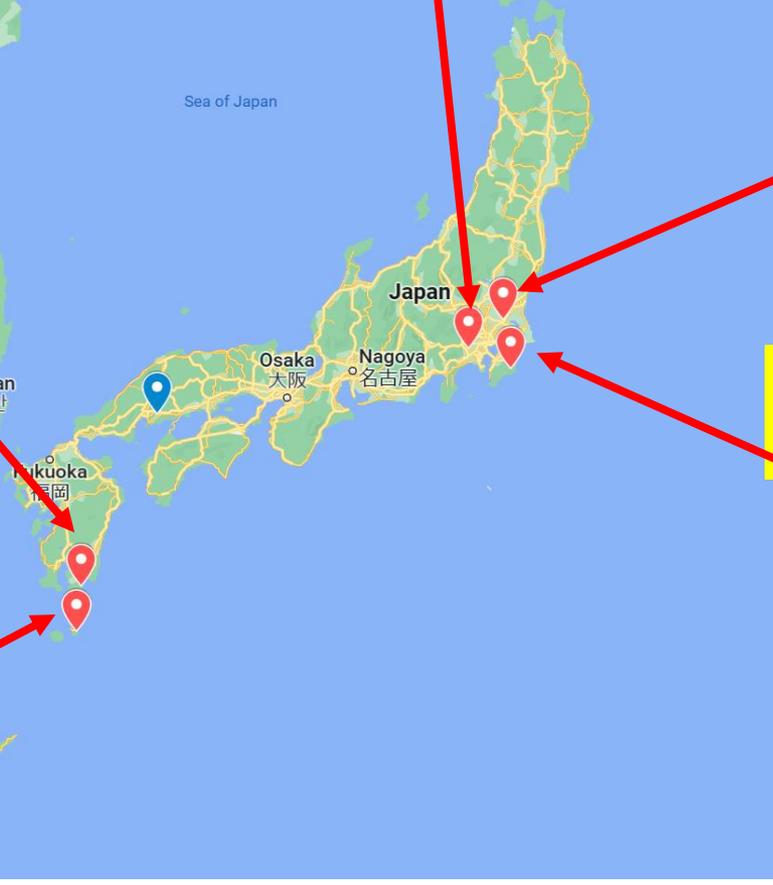
**Uchinoura (=USC)**  
(34/20m antenna):  
telemetry (main)



**Katsuura (20m antenna):**  
telemetry (backup)



**Tanegashima: launch**



4-5 passes/day only at Uchinoura (=USC)

- Command uplink/Data downlink are performed.

Other NASA/JAXA ground stations (every ~3 hours)

- Status monitor in nominal case
- Operations only in emergency cases
  
- Long-term schedule: every 3 months
- Short-term schedule: every 1 week (inc. next 3 weeks)
- Before 3 weeks, PIs are informed to check observation modes.
  
- Command uplinks are everyday from Uchinoura (USC).
- Commands are generated only on Mon-Sat (except for Sun).
  - On Sat, 2 command sets are generated.
  - It takes ~3.5 hours to generate 1 command set.

# TOO request

<https://xrism.isas.jaxa.jp/research/proposer/index.html>



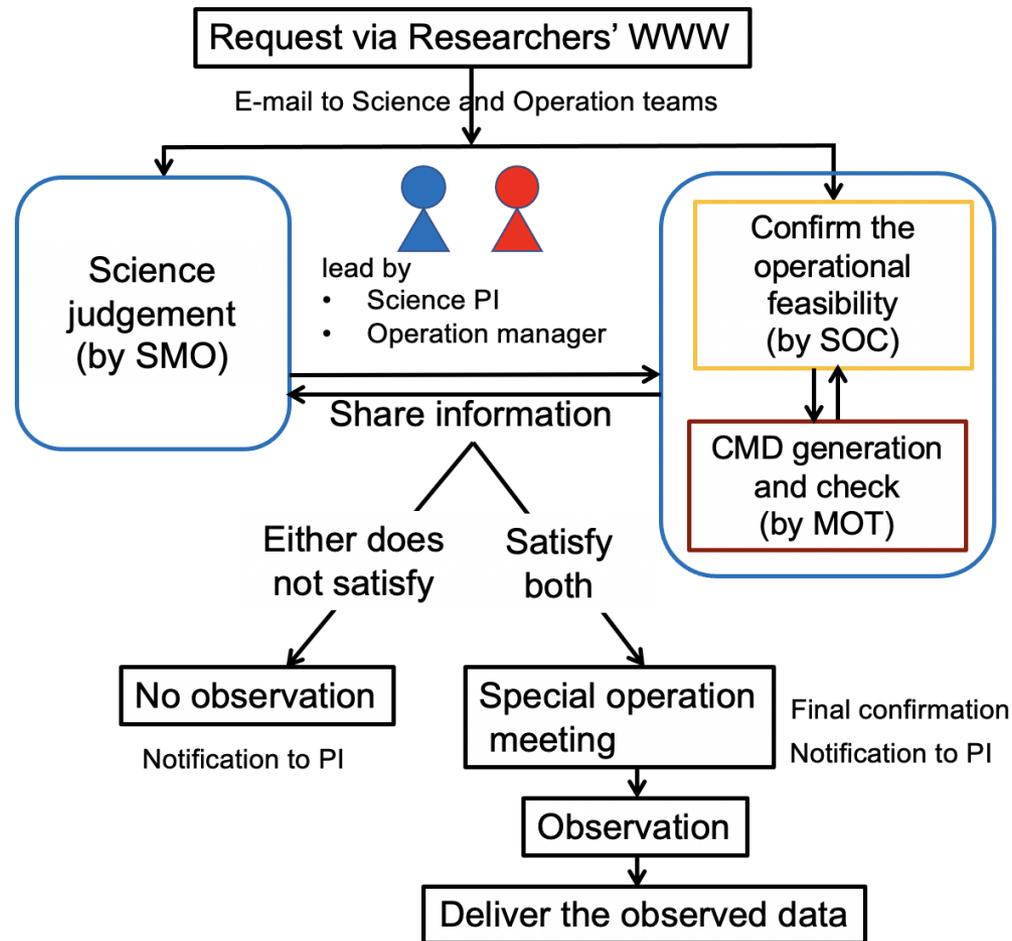
[Home](#) > [Proposer](#)

Home *:under construction	<b>Proposer</b>
About XRISM	* <a href="#">Current AO announcement</a>
Proposer	* <a href="#">Current AO ARK/RPS page</a>
Useful links	<b><u>Planning Observation</u></b>
	* <a href="#">Generic TOO request</a> ← <b>TOO</b>
	<b><u>Approved Target List</u></b>

TOO request exists only in JAXA web page.

#AO proposals are submitted through each agency of JAXA/NASA/ESA.

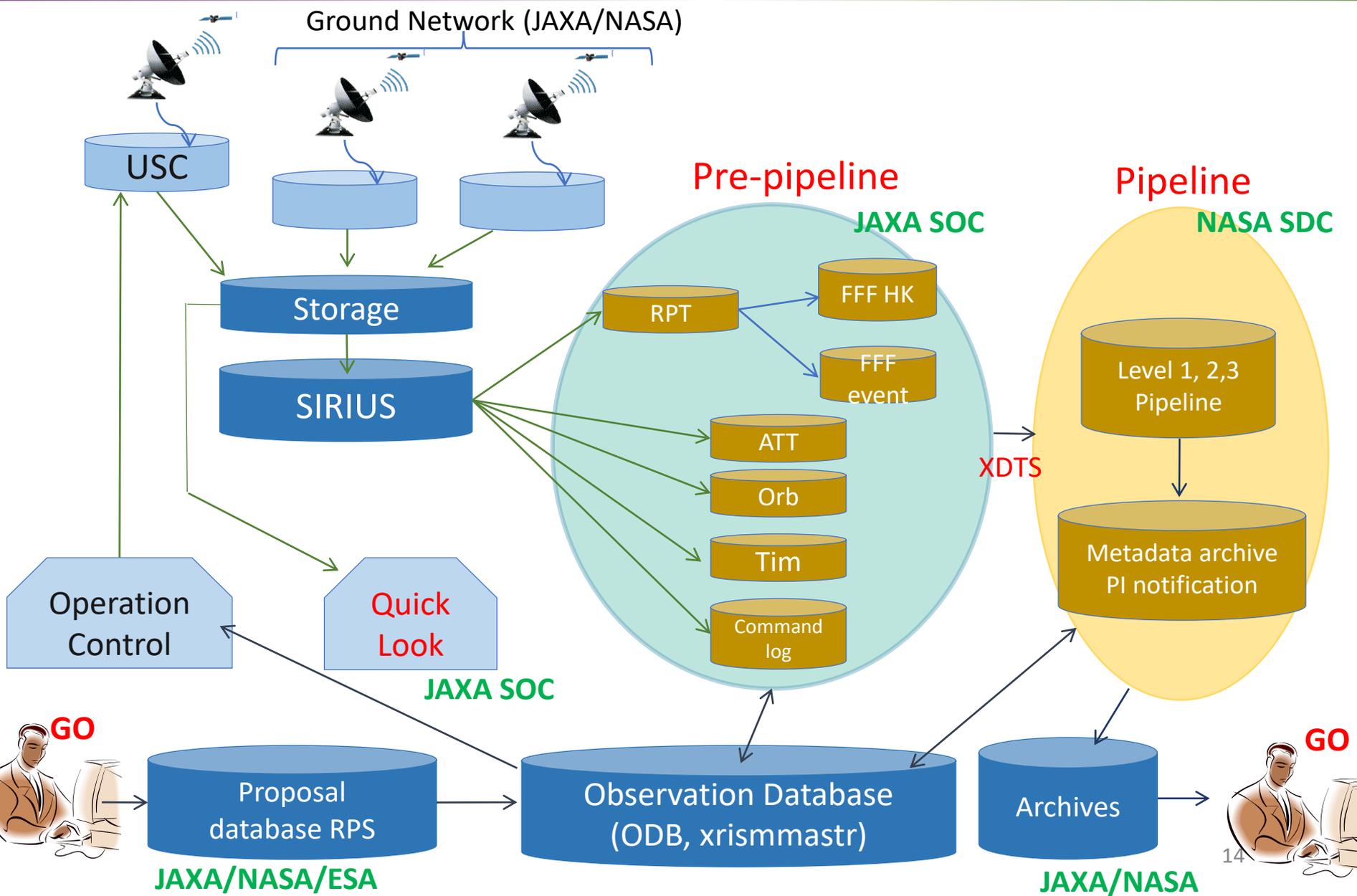
# TOO timeline



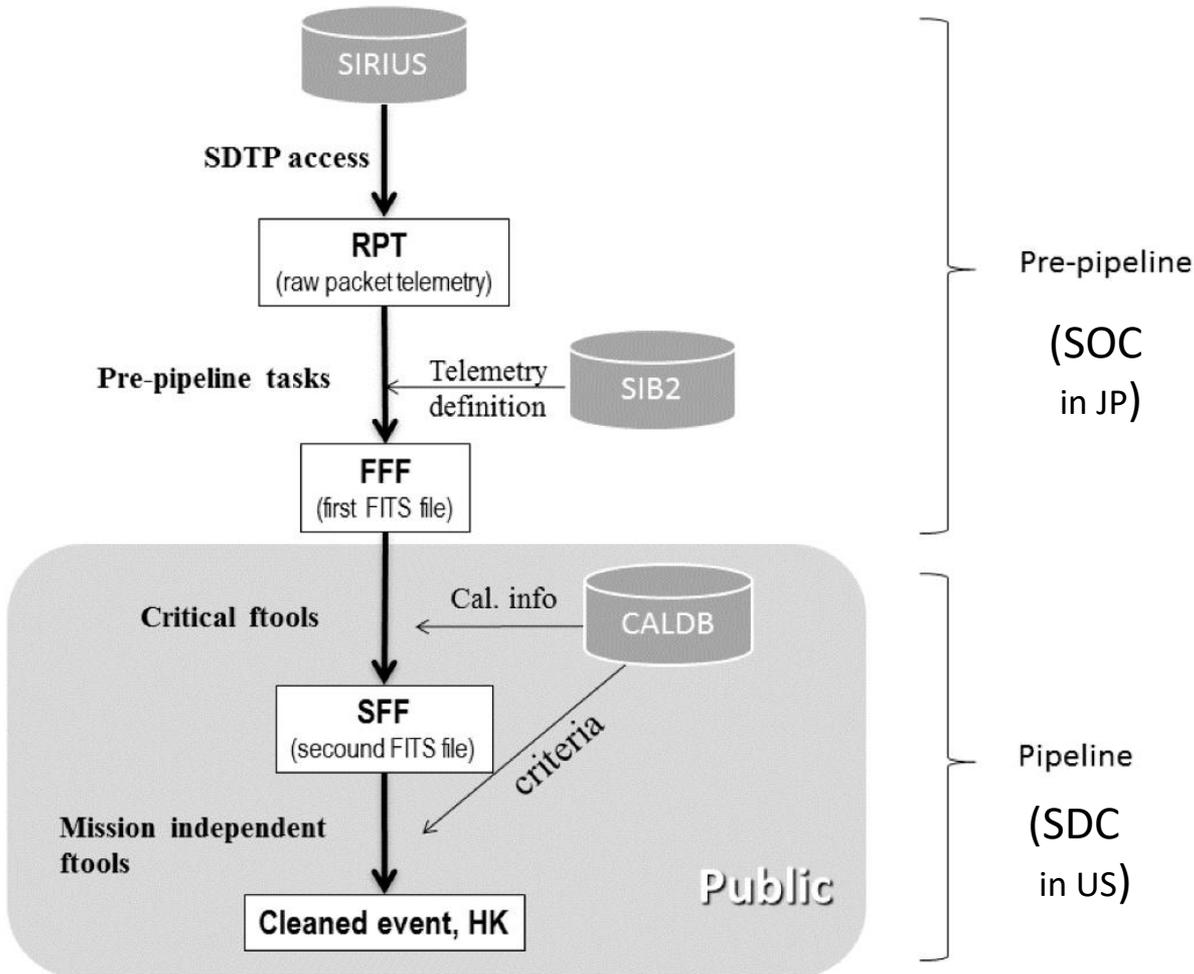
- Start of TOO observation may take up to **2 days (weekday) or 3 days (weekend)**.  
≤ Judgement, cmd generation, only Uchinoura, no cmd on Sun.
- Maneuver takes up to **~1 hour for 180-deg.**



# Data process/distribution



# Data type/format



- RPT (raw packet telemetry)
- FFF (first fits file) are not public.
- SFF (second fits file) is the same format as FFF with calibrated information. ⇒ Users can reprocess only from SFF.



# Transient Search (Xtend)

## Target Form(s)

### Target: 1

Do you want to delete this target?

Target Name

Target Position, J2000 Equinox — Use our [Coordinate Converter](#) to convert positions or look up

R.A.

Dec.

Total Observation Time  ksec

Number of Observations

Resolve Count Rate  counts/sec — Use [WebPIMMS](#) to estimate count rate.

Resolve Filter

Xtend Count Rate  counts/sec — Use [WebPIMMS](#) to estimate count rate.

Xtend Option

**Xtend Transient Search**  
Do you agree to Xtend Transient Search by the XRISM team?

If Yes, do you want to be a co-author of the telegram?

(Even if you are to be a co-author, XRISM team will not contact you prior to Atel and/or GCN submission, for rapid circulation.)

Feel free to add any comments about Xtend Transient Search.

Coordinated Observation?  Yes

Observatory

Description

For contributing Multi-messenger astronomy, if GO proposers agree at proposal submission, XRISM team will search transient sources using Xtend data outside FoV(Resolve).

**Please check “YES” for Xtend transient search.**

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Description

- Science Operation Team = SOC (JAXA) + SDC (GSFC)
  - SOC (JAXA) includes Mission Operation Team: MOT.
- JAXA facilities
- Operation timeline
  - TOO observation takes 2-3 days.
- Data process/distribution takes 1-2 weeks.
- Xtend transient search: please check in your proposal.